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# TECHNICAL MEMORANDUM

Utah Coal Regulatory Program

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February 28, 2011

TO: Internal File

THRU: Ingrid Campbell, Mine Lead

FROM: Steve Christensen, Environmental Scientist

RE: Penta Creek Lease Extention, West Ridge Resources, West Ridge Mine, Permit # C/007/0041 and Task #3733

## SUMMARY:

On February 1<sup>st</sup>, 2011, the Division of Oil, Gas and Mining (the Division) received an amendment from West Ridge Resources. The amendment proposes to revise the West Ridge Mine permit area with the addition of 555.33 acres. The expansion is located with the Penta Creek Lease, Federal Lease UTU-78562 and SITLA lease ML-51744.

No additional surface disturbance is proposed. The Permittee has provided updated spring and seep information for the proposed expansion areas. The current Cumulative Impact Area (CIA) encompasses the proposed lease expansions although a revision to the Probable Hydrologic Consequences has been provided with the amendment.

The area of proposed mining is located north and adjacent to the Grassy Trail Reservoir. The depth of cover in the expansion areas is considerable ranging from 2,000-3,000 feet. Due to the overburden depths, the Permittee proposes to utilize a panel/barrier longwall mining technique in order to maximize safety. The panel/barrier mining technique has been used previously at the West Ridge Mine in the north-western portions of the permit area in State Lease ML-47711 and Federal Lease UTU-78562. The panel/barrier mining that occurred in these areas produced significantly reduced amounts of subsidence.

The amendment does not meet the hydrologic requirements of the State of Utah R645-Coal Mining Rules and is not recommended for approval. The following deficiencies must be addressed:

**R645-301-724.100:** The Permittee must provide the complete November 1999 spring and seep inventory report presented in Appendix 7-6A (including all maps and figures cited in the report). Upon review of the 1999 spring and seep survey, it's unclear as to what the boundaries of the survey area were and the locations of the seeps and springs that were identified.

**R645-301-724.200:** The Permittee must provide sufficient baseline information for the Right Fork of Whitmore Canyon in order to document the pre-mining characteristics of this drainage. If available, historical data can be utilized.

**R645-301-731.220:** The Permittee must establish a surface water monitoring point on the Right Fork of Whitmore Canyon in order to collect pre-mining baseline data for this drainage as well as operational monitoring data.

**TECHNICAL ANALYSIS:**

**ENVIRONMENTAL RESOURCE INFORMATION**

Regulatory Reference: Pub. L 95-87 Sections 507(b), 508(a), and 516(b); 30 CFR 783., et. al.

**HYDROLOGIC RESOURCE INFORMATION**

Regulatory Reference: 30 CFR Sec. 701.5, 784.14; R645-100-200, -301-724.

**Analysis:**

**Baseline Information**

The application does not meet the baseline information requirements of the State of Utah R645-Coal Mining Rules.

The application does not contain baseline information for the Right Fork of Whitmore Canyon. Map 5-4A, *Mining Projections* depicts development mining directly below the Right Fork of Whitmore Canyon and full extraction occurring within approximately 400' at Panel 20.

The Permittee must provide sufficient baseline information for the Right Fork of Whitmore Canyon in order to document the pre-mining characteristics of this drainage. If available, historical data can be utilized.

The spring and seep survey information has been updated to include the expansion areas. The additional spring and seep data was collected in August of 2010 by Erik Petersen of Petersen Hydrologic, LLC. The information is presented in Appendix 7-6A.

Appendix 7-5, Water Rights Summary, has been updated to reflect the water rights within the proposed expansion area. Additionally, Map 7-3, Water Rights, has been revised to depict the water rights. Two point-to-point surface water rights are located on the Right Fork of Whitmore Canyon (91-2038 and 91-3519).

The Permittee must provide the complete November 1999 spring and seep inventory report presented in Appendix 7-6A (including all maps and figures cited in the report). Upon review of the 1999 spring and seep survey, it's unclear as to what the boundaries of the survey area were and the locations of the seeps and springs that were identified.

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**Probable Hydrologic Consequences Determination**

The application meets the Probable Hydrologic Consequences Determination of the State of Utah R645-Coal Mining Rules.

The Permittee discusses the potential for impacts to the Grassy Trail Reservoir beginning on page 7-24. The Division approved a mine plan revision in 2005 that allowed longwall mining to occur directly adjacent to the Grassy Trail Reservoir. Panel #7 was the closest in proximity to Grassy Trail Reservoir (completed mining in September 2006). Based upon the information submitted by RB&G consultants, there was no mining related damage to the dam as result of the full extraction of Panel #7. The integrity of the earthen structure of the dam was maintained.

Following the completion of Panel #7, the longwall was moved approximately 2 miles to the west. As a result of the significant amount of overburden in this area, a panel/barrier longwall mining method was initiated at that time. The panel/barrier system leaves a 400' wide barrier pillar between each longwall panel which greatly reduced the magnitude and frequency of mining-related seismic events. The proposed mining block in this application will be more than three times further away from the dam than Panel #7 and will utilize a panel/barrier configuration. As a result, the potential for impacts to the Grassy Trail Reservoir are minimal.

The potential impacts to surface water resources are minimal as well. A barrier pillar of coal is located directly below the Left Fork of Whitmore Canyon (See Map 5-7, Subsidence map). No planned subsidence will occur on the Right Fork of Whitmore Canyon. Development mining only will occur below the Right Fork drainage. The amount of overburden in the area of the Right Fork of Whitmore Canyon ranges from 2,500-3,000' below grade. As a result of this extensive cover, the potential for impacts to this drainage are considered minimal.

**Findings:**

The application does not meet the Hydrologic Information requirements of the State of Utah R645-Coal Mining Rules. The following deficiencies must be addressed:

**R645-301-724.100:** The Permittee must provide the complete November 1999 spring and seep inventory report presented in Appendix 7-6A (including all maps and figures cited in the report). Upon review of the 1999 spring and seep survey, it's unclear as to what the boundaries of the survey area were and the locations of the seeps and springs that were identified.

**R645-301-724.200:** The Permittee must provide sufficient baseline information for the Right Fork of Whitmore Canyon in order to document the pre-mining characteristics of this drainage. If available, historical data can be utilized.

## **OPERATION PLAN**

### **HYDROLOGIC INFORMATION**

Regulatory Reference: 30 CFR Sec. 773.17, 774.13, 784.14, 784.16, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-300-140, -300-141, -300-142, -300-143, -300-144, -300-145, -300-146, -300-147, -300-148, -301-512, -301-514, -301-521, -301-531, -301-532, -301-533, -301-536, -301-542, -301-720, -301-731, -301-732, -301-733, -301-742, -301-743, -301-750, -301-761, -301-764.

#### **Analysis:**

##### **Surface-Water Monitoring Plan**

The application does not meet the Surface-Water Monitoring Plan requirements of the State of Utah R645-Coal Mining Rules.

The Permittee must establish a surface water monitoring point on the Right Fork of Whitmore Canyon in order to collect pre-mining baseline data for this drainage.

##### **Stream Buffer Zones**

The application meets the Stream Buffer Zone requirements of the State of Utah R645-Coal Mining Rules.

No subsidence is planned along the Left and Right forks of Whitmore Canyon. The mine projections depicted on Map 5-4A, Mining Projections shows a barrier pillar directly underneath the Left Fork of Whitmore Canyon. Mine development will occur beneath the Right Fork of Whitmore Canyon but not longwall coal extraction.

#### **Findings:**

The application does not meet the Hydrologic Information requirements of the State of Utah R645-Coal Mining Rules.

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**R645-301-731.220:** The Permittee must establish a surface water monitoring point on the Right Fork of Whitmore Canyon in order to collect pre-mining baseline data for this drainage as well as operational monitoring data.

## RECLAMATION PLAN

### HYDROLOGIC INFORMATION

Regulatory Reference: 30 CFR Sec. 784.14, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-301-512, -301-513, -301-514, -301-515, -301-532, -301-533, -301-542, -301-723, -301-724, -301-725, -301-726, -301-728, -301-729, -301-731, -301-733, -301-742, -301-743, -301-750, -301-751, -301-760, -301-761.

#### Analysis:

##### Hydrologic Reclamation Plan

The amendment meets the Hydrologic Reclamation Plan requirements of the State of Utah R645-Coal Mining Rules.

No additional surface disturbance is planned with the proposed IBC. As a result, the Hydrologic Reclamation Plan requirements do not require revisions at this time.

#### Findings:

The amendment meets the Hydrologic Reclamation Plan requirements of the State of Utah R645-Coal Mining Rules.

## CUMULATIVE HYDROLOGIC IMPACT ASSESSMENT

Regulatory Reference: 30 CFR Sec. 784.14; R645-301-730.

#### Analysis:

The amendment meets the Cumulative Hydrologic Impact Assessment (CHIA) requirements of the State of Utah R645-Coal Mining Rules.

The proposed expansion areas are within the existing CHIA and has been evaluated for potential mining induced impacts to the hydrologic balance within the cumulative impact area.

**Findings:**

The amendment meets the Cumulative Hydrologic Impact Assessment (CHIA) requirements of the State of Utah R645-Coal Mining Rules.

**RECOMMENDATIONS:**

The amendment is not recommended for approval at this time.